WE CLAIM:

1. An air-cooled turbine blade, the blade having an airfoil shape defined by a convex suction side wall, a concave pressure side wall, a leading edge, a trailing edge, a root and a tip, the walls, edges, root and tip forming an interior for receiving blade cooling circuits; the turbine blade comprising:

a plurality of independent cooling circuits within said interior, at least one of said cooling circuits being positioned to cool said pressure side wall and at least one other of said cooling circuits being positioned to cool said suction side wall.

2. The turbine blade recited in Claim 1 wherein said plurality of cooling circuits comprises respective individual air inlets.

3. The turbine blade recited in Claim 1 wherein said plurality of cooling circuits are mechanically interconnected to one another.

4. The turbine blade recited in Claim 1 wherein said plurality of cooling circuits comprises at least two of said cooling circuits positioned to cool said suction side wall, one closer to the leading edge and one closer to the trailing edge

5. The turbine blade recited in Claim 1 wherein said plurality of cooling circuits comprises at least one cooling circuit positioned substantially in the center of said interior.

6. The turbine blade recited in Claim 5 wherein said at least one cooling circuit positioned substantially at the center of said interior comprises walls having a greater thickness than the walls of said pressure side and suction side cooling circuits.

7. The turbine blade recited in Claim 1 wherein said at least one pressure side wall cooling circuit comprises a serpentine passage having a plurality of pin fins and at least one turning vane.

8. The turbine blade recited in Claim 4 wherein said suction side cooling circuit closer to the leading edge comprises a plenum positioned adjacent said tip for cooling said tip.

9. The turbine blade recited in Claim 4 wherein said suction side wall cooling circuit closer to said trailing edge comprises a serpentine portion and a pin bank portion, said pin bank portion having a plurality of tear drop slots forming trailing edge air flow dividers for cooling said trailing edge.

10. The turbine blade recited in Claim 9 wherein said pin bank comprises a plurality of pin fins, said tear drop slots having two said pin fins between adjacent slots.

11. The turbine blade recited in Claim 9 wherein said pin bank portion comprises a trailing edge tip flag having tip strip turbulators positioned adjacent said blade tip.

12. The turbine blade recited in Claim 7 wherein said at least one pressure side wall cooling circuit comprises a super charger channel bypassing said serpentine passage.

13. An air-cooled turbine blade, the blade having an airfoil shape defined by a convex suction side wall, a concave pressure side wall, a leading edge, a trailing edge, a root and a tip, the walls, edges, root and tip forming an interior for receiving blade cooling circuits; the turbine blade comprising:

a plurality of independent cooling circuits within said interior, at least one of said cooling circuits being positioned to cool said pressure side wall and at least one other of said cooling circuits being positioned to cool said suction side wall;

wherein said plurality of cooling circuits are mechanically interconnected to one another; and

wherein at least two of said cooling circuits are positioned to cool said suction side wall, one closer to the leading edge and one closer to the trailing edge; and

wherein at least one of said plurality of cooling circuits is positioned substantially in the center of said interior.

14. The turbine blade recited in Claim 13 wherein said at least one cooling circuit positioned substantially at the center of said interior comprises walls having a greater thickness than the walls of said pressure side and suction side cooling circuits.

15. The turbine blade recited in Claim 13 wherein said at least one pressure side wall cooling circuit comprises a serpentine passage having a plurality of pin fins and at least one turning vane.

16. The turbine blade recited in Claim 13 wherein said suction side cooling circuit closer to the leading edge comprises a plenum positioned adjacent said tip for cooling said tip.

17. The turbine blade recited in Claim 13 wherein said suction side wall cooling circuit closer to said trailing edge comprises a serpentine portion and a pin bank portion, said pin bank portion having a plurality of tear drop slots forming trailing edge air flow dividers for cooling said trailing edge.

18. The turbine blade recited in Claim 17 wherein said pin bank comprises a plurality of pin fins, said tear drop slots having two said pin fins between adjacent slots.

19. The turbine blade recited in Claim 17 wherein said pin bank portion comprises a trailing edge tip flag having tip strip turbulators positioned adjacent said blade tip.

20. The turbine blade recited in Claim 15 wherein said at least one pressure side wall cooling circuit comprises a super charger channel bypassing said serpentine passage.

21. An air-cooled turbine blade, the blade having an airfoil shape defined by a convex suction side wall, a concave pressure side wall, a leading edge, a trailing edge, a root and a tip, the walls, edges, root and tip forming an interior for receiving blade cooling circuits; the turbine blade comprising:

a plurality of independent cooling circuits within said interior, at least one of said cooling circuits being positioned to cool said pressure side wall and at least one other of said cooling circuits being positioned to cool said suction side wall;

wherein said plurality of cooling circuits are mechanically interconnected to one another; and

wherein at least two of said cooling circuits are positioned to cool said suction side wall, one closer to the leading edge and one closer to the trailing edge;

wherein at least one of said plurality of cooling circuits is positioned substantially in the center of said interior and has walls having a greater thickness than the walls of said pressure side and suction side cooling circuits;

said at least one pressure side wall cooling circuit having a serpentine passage, said passage having a plurality of pin fins and at least one turning vane;

said suction side cooling circuit closer to the leading edge having a plenum positioned adjacent said tip for cooling said tip;

said suction side wall cooling circuit closer to said trailing edge having a serpentine portion and a pin bank portion, said pin bank portion having a plurality of tear drop slots forming trailing edge air flow dividers for cooling said trailing edge.

22. The turbine blade recited in Claim 21 wherein said pin bank comprises a plurality of pin fins, said tear drop slots having two said pin fins between adjacent slots.

23. The turbine blade recited in Claim 21 wherein said pin bank portion comprises a trailing edge tip flag having tip strip turbulators positioned adjacent said blade tip.

24. The turbine blade recited in Claim 21 wherein said at least one pressure side wall cooling circuit comprises a super charger channel bypassing said serpentine passage.

25. A method for improving the cooling effectiveness of an air-cooled turbine blade, the blade having an airfoil shape defined by a convex suction side wall, a concave pressure side wall, a leading edge, a trailing edge, a root and a tip, the walls, edges, root and tip forming an interior for receiving blade cooling circuits; the method comprising the steps of:

providing a plurality of independent cooling circuits within said interior; and

injecting cooling air into each said cooling circuit through respective independent air inlets.

26. The method recited in Claim 25 further comprising the steps of:

positioning at least one of said cooling circuits adjacent said suction side wall; and

positioning at least one of said cooling circuits adjacent said pressure sidewall.

27. The method recited in Claim 25 further comprising the step of:

positioning at least one of said cooling circuits substantially in the center of said interior.

28. The method recited in Claim 27 further comprising the step of:

providing said center-positioned cooling circuit with thicker walls than the walls of the remaining cooling circuits.

29. The method recited in Claim 26 further comprising the step of:

forming said at least one pressure side adjacent cooling circuit with a serpentine passage having a plurality of pins and at least one turning vane.

30. The method recited in Claim 25 further comprising the steps of:

positioning at least one of said cooling circuits adjacent said leading edge; and

forming said leading edge adjacent said cooling circuit to have a plenum positioned for cooling said tips.

31. The method recited in Claim 30 further comprising the step of rensing cooling air after it cools said plenum.

32. The method recited in Claim 26 further comprising the step of forming said at least one suction side adjacent said cooling circuit to have an out of plane serpentine bend.

33. The method recited in claim 29 further comprising the step of optimizing the configuration of said plurality of pins and said at least one tuning vane to maximize flow separation and heat transfer.